

Notice of Allowability

Application No.

09/993,387

Examiner

Anthony J. Daniels

Applicant(s)

RAYNOR ET AL.

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 8/30/2007.
2. ☒ The allowed claim(s) is/are 11, 13-21, 23-30 and 32-40.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


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SUPERVISORY PATENT EXAMINER

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Claim 19 (Currently Amended): A solid-state imaging device according to Claim 11 ~~18~~, wherein each store circuit further comprises: a third store circuit for storing a second reset value, with a current reset value and a current read out value being processed simultaneously based upon application of a new reset pulse.

Claim 21 (Currently Amended): A solid state imaging device comprising: a two-dimensional array of pixels defining an image plane, the image plane comprising more than three rows of pixels, with each pixel comprising a photosensitive ~~diode~~, diode and a switching circuit for resetting and discharging said diode; a multiconductor signal bus connected to said array of pixels, said multiconductor bus comprising a respective conductor to provide a dedicated readout channel for only one pixel of said two-dimensional array of pixels defining the image plane; and readout electronics comprising a plurality of store circuits laterally adjacent the image plane and connected to said multiconductor signal bus for reading signals from said array of pixels, with a store circuit corresponding to each pixel and comprising a first store circuit for storing a reset value, and a second store circuit for storing a readout value, with the readout value of a given pixel being modified by the stored reset value for that pixel.

Claim 27: (Canceled)

Claim 28 (Currently Amended): A solid-state imaging device according to Claim 21 ~~27~~, wherein each store circuit further comprises: a third store circuit for storing a second reset value, with a

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current reset value and a current read out value being processed simultaneously based upon application of a new reset pulse.

As to claim 30 (Currently Amended): A method for making a solid state imaging device comprising: defining an image plane using a two-dimensional array of pixels, the image plane comprising more than three rows of pixels; placing readout electronics comprising a plurality of store circuits laterally adjacent the image plane for reading signals from the array of pixels, with a store circuit corresponding to each pixel and comprising a first store circuit for storing a reset value, and a second store circuit for storing a readout value, with the readout value of a given pixel being modified by the stored reset value for that pixel; and connecting a multiconductor signal bus connected between the array of pixels and the readout electronics, the multiconductor bus comprising a respective conductor to provide a dedicated readout channel for only one pixel of the two-dimensional array of pixels defining the image plane.

Claim 38: (Canceled)

Claim 39 (Currently Amended): A method according to Claim 30 38, wherein each store circuit further comprises a third store circuit for storing a second reset value, with a current reset value and a current read out value being processed simultaneously based upon application of a new reset pulse.

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3. The following is an examiner's statement of reasons for allowance: As to claims **11** and **21**, the prior art of record does not teach or fairly suggest a solid-state imaging device comprising an image plane including more than three rows of pixels; and readout electronics comprising a plurality of store circuits laterally adjacent the image plane for reading signals from the array of pixels, with a store circuit corresponding to each pixel and comprising a first store circuit for storing a reset value, and a second store circuit for storing a readout value, with the readout value of a given pixel being modified by the stored reset value for that pixel in combination with the rest of the claim. Claim **30** is a method claim corresponding to the apparatus claim 11. Thus, claim 30 is allowed for similar reasons.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Daniels whose telephone number is (571) 272-7362. The examiner can normally be reached on 8:00 A.M. - 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AD
10/3/2007



LIN YE
SUPERVISORY PATENT EXAMINER

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael Taylor (Reg. No: 43,182) on Monday, October 1, 2007.

2. The application has been amended as follows:

Claim 11 (Currently Amended): A solid state imaging device comprising: a two-dimensional array of pixels defining an image plane, the image plane comprising more than three rows of pixels; readout electronics comprising a plurality of store circuits ~~at least one store circuit~~ laterally adjacent the image plane for reading signals therefrom, with a store circuit corresponding to each pixel and comprising a first store circuit for storing a reset value, and a second store circuit for storing a readout value, with the readout value of a given pixel being modified by the stored reset value for that pixel; and a multiconductor signal bus connected between said array of pixels and said readout electronics, said multiconductor bus comprising a respective conductor to provide a dedicated readout channel for only one pixel of said two-dimensional array of pixels defining the image plane.

Claim 18: (Canceled)